Examining Relationships between Developmental Assets and Risky Sexual Behaviors in Transgender and Gender Expansive Adolescents

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Abstract

Aims: The aims of this study were: to describe the sample of transgender and gender expansive adolescents with regard to risky sexual behaviors and developmental assets in comparison to cisgender adolescents, to identify the relationships between risky sexual behaviors and developmental assets in the transgender and gender expansive adolescent population, and to compare those relationships among biologically male and female transgender adolescents.

Sample: Data are from 80,929 adolescents who completed the 2016 Minnesota Student Survey. Responses from students were recorded from all parts of the state to help ensure a diverse sample was available.

Methods: This is a secondary analysis of a cross sectional survey administered in schools affiliated with school districts in Minnesota in 2016. The survey assesses a number of adolescent risk factors including alcohol and drug use, irresponsible driving, and sexual activity. Gender identity was measured with a survey item which read "Do you consider yourself transgender, genderqueer, genderfluid, or unsure about your identity?" Risky sexual behavior was measured by items regarding inconsistent or noncondom use, lifetime sexual partners, use of an unreliable or no contraceptive, and sex under the influence of alcohol or drugs. Developmental assets are internal and external characteristics that assist adolescents in their transition to adulthood. Analyses were conducted to investigate 1) differences between cisgender and transgender adolescents in terms of developmental assets and risky sexual behaviors, 2) relationships between developmental assets and sexual behavior for transgender youth, and 3) differences between transgender males and females using two-tailed t-tests and Chi-square tests.

Results: Of the 80,929 adolescent participants in the Minnesota Student Survey, 15,749 (22.0%) cisgender and 572 (22.9%) transgender and gender expansive adolescents reported ever having

had sexual intercourse. Cisgender adolescents reported higher levels of all positive developmental assets and less engagement in all risky sexual behavior than transgender and gender expansive adolescents ($p < 0.001$). Within the transgender and gender expansive subsample, positive identity was negatively related to having multiple sexual partners ($p < 0.005$), empowerment was related to inconsistent or Noncondom use ($p < 0.008$), having sexual intercourse under the influence of alcohol or drugs ($p < 0.042$), and using an unreliable or no contraceptive ($p < 0.021$). Social competency was related to having multiple sexual partners and having sexual intercourse under the influence of alcohol or drugs ($p < 0.001$). Biological female students reported higher levels of positive developmental assets (positive identity and empowerment, $p < 0.001$) and engaged in more risky sexual behaviors (having multiple sexual partners, $p < 0.026$ and having sex under the influence of alcohol or drugs, $p < 0.001$) than biological males.

Recommendations: More research is needed on the differences between transgender and gender expansive females and males. High developmental assets are protective for adolescents and can help prevent engagement in risky sexual behaviors. Social and healthcare programs can help develop assets to help prevent and reduce engagement in risky sexual behaviors. Nurses working with transgender and gender expansive adolescents should assess for levels of positive developmental assets to determine which transgender and gender expansive adolescents are more or less likely to engage in risky sexual behavior. All adolescents should be provided more LGBTQ-inclusive sexual education.

Background

Adolescent engagement in risky sexual behavior may lead to the spread of sexually transmitted infections (STIs), human immunodeficiency virus (HIV), and unplanned pregnancies. Prevention of these unwanted outcomes often involves comprehensive sexual education programs that teach adolescents about many topics and provide them with skills and strategies to resist or engage in safe sex (Kirby et al., 1994). Such comprehensive programs have been shown to delay the initiation of intercourse, reduce frequency of intercourse and number of partners, and increase condom and other contraceptive use (Kirby et al., 1994). Most sexual education programs could be considered less comprehensive because they are based solely on heterosexual and cisgender (when a person identifies with their biological sex) relationships and anatomy, leaving sexual and gender minority adolescents with less applicable and less useful information about risky sexual behavior. Specifically, adolescents who identify as transgender (when a person's biological sex is different than their gender identity) or gender expansive (when a person's gender identity does not fall on a traditional binary scale of "male" and "female") are particularly susceptible to engage in risky sexual behaviors because they tend to lack the education about their bodies that cisgender youth receive (Keuroghlian, Ard, & Makfadon, 2017).

Like many adolescents, transgender and gender expansive adolescents do not always use protection or make educated decisions about sexual activities, particularly as they pertain to HIV transmission (Garofalo, Deleon, Osmer, Doll, & Harper, 2006). In addition to a lack of accurate information about transgender sexual activities, the Centers for Disease Control and Prevention (CDC, 2017) reports that the additional stress that comes with a lesbian, gay, bisexual, transgender, or queer/questioning (LGBTQ) identity places these adolescents at increased risk

for behaviors that may lead to contracting HIV and other STIs. Sexual orientation and gender identity are different identity characteristics, but are often combined in research studies due to similar sexual risks.

Developmental assets are characteristics that assist adolescents in their transition to adulthood (Search Institute, 2017). There are internal factors, which come from inside oneself and include characteristics like self-esteem, as well as external factors which come from outside sources like relationships and environments. Protective factors are those conditions that are associated with decreases or reductions in adolescent risky health behaviors. Often researchers focus on internal characteristics or strengths such as a young person's social competency regarding skills for planning, decisions, empathy, sensitivity, and resisting peer pressure (Search Institute, 2017). Another internal element is positive personal identity, which includes feeling in control over one's life, having high self-esteem, and a sense of purpose (Search Institute, 2017). Additionally, external characteristics are assets that come from outside the young person themselves and include empowerment from friends, family members, and one's environment. These internal and external characteristics that influence young people's development from childhood to adulthood are called developmental assets. A higher number of developmental assets help to increase the capacity among adolescents to overcome challenges as they transition to adulthood (Bleck & DeBate, 2016), such as risky sexual behavior.

While sexual behavior among heterosexual, cisgender teens is a well-studied area, less is known about the sexual risk-taking of transgender and gender expansive teens. Furthermore, even less is known about whether transgender and gender expansive teens' developmental assets are associated with their sexual behavior. Preventing STI and HIV transmission, as well as unplanned pregnancies is crucial in all populations, but particularly in this vulnerable population

of adolescents. The purpose of this study is to examine relationships between developmental assets and risky sexual behavior among transgender and gender expansive adolescents in Minnesota. Improved knowledge about these relationships could help educators, parents, and peers identify transgender and gender expansive adolescents who may be at the greatest risk for engaging in risky sexual behavior, contracting or spreading STIs, and becoming pregnant.

Research Aim

The aims of this study were threefold and centered upon students who reported being sexually active. The first aim focused on describing the sample of transgender and gender expansive adolescents specifically with regard to risky sexual health behaviors and developmental assets in comparison to cisgender adolescents. The second aim was to examine the relationships between three types of developmental assets and risky sexual behaviors among transgender and gender expansive adolescents. The developmental assets examined were social competency, positive identity, and empowerment. Risky sexual behaviors were having sex without a condom, with unreliable or no contraceptives, with multiple partners, and being under the influence of drugs or alcohol during sex. Lastly, potential relationships were compared between transgender and gender expansive adolescents who were born biologically male versus those who were born biologically female. Analysis of these relationships helped to identify potential protective factors against risky sexual behaviors in transgender and gender expansive adolescents.

Significance for Nursing

If relationships between developmental assets and risky sexual behavior are identified, nurses would better be able to serve the transgender and gender expansive adolescent population in terms of prevention and health promotion. Specifically, nurses would assess who is protected

or at greater risk by asking questions about developmental assets, in addition to questions about sexual activity. The addition of developmental asset assessments could help nurses to conduct a more thorough assessment of social history, in addition to complete sexual history. By obtaining both a developmental asset assessment and a complete sexual history, nurses can provide more comprehensive care for transgender and gender expansive adolescent patients.

Literature Review

Adolescent Sexual Risks

Many adolescents engage in risky sexual behavior that places them in danger of contracting or spreading STIs, having an unplanned pregnancy, and contracting HIV. In 2015, the CDC reported that in the United States, 41.2% of all adolescents and 40.9% of heterosexual students had ever had sex (2016). This is down slightly from 2013 when 46.8% of adolescents reported ever having sex (CDC, 2014a). Teen pregnancy and sexually transmitted infection (STI) prevention among young people in general has received great attention from the media. With this attention has come education and prevention efforts, especially targeting schools with sexual education programs (Greytak, Kosciw, Palmer & Boesen, 2014). Adolescents are becoming increasingly aware of the consequences of pregnancy and are taking measures to prevent becoming parents in adolescence. Pregnancy among teens has been at historically low rates in recent years, with an overall rate of 2.42% for girls between the ages of 15-19 (CDC, 2016). Yet still, 14% of sexually active adolescents did not use any contraceptive the last time they had sex (CDC, 2017). Adolescents report using birth control pills, intrauterine device (IUD), implant, shot, patch, or birth control ring 26.8% of the time (CDC, 2016).

While adolescents may be more aware of what is required to prevent pregnancy, they continue to engage in risky behaviors that include having sex without a condom, sex with

multiple partners, being under the influence of drugs or alcohol during sex, and unprotected sex with multiple partners (CDC, 2016). Condoms are the only form of contraceptive that can help prevent the spread of sexually transmitted infections, including HIV. New HIV diagnoses have decreased overall by 30% in the United States over the course of the last decade (Camacho-Gonzalez et al., 2016). However, between 2002-2011, new HIV diagnoses have increased markedly among adolescents and young adults, by 34.8% (Camacho-Gonzalez et al., 2016). This increase is related to lack of condom use. Recent estimates suggest that only 56.9% of adolescents used a condom during their last sexual encounter (CDC, 2016). It is not just inconsistent condom use that qualifies as risky sexual behavior, however, number of sexual partners also increases risk. The CDC also reports that 11.5% of all adolescents have had four or more sexual partners (2016); two or more lifetime sexual partners is considered risky sexual behavior for adolescents (Poulin & Graham, 2001; Rucevíc, 2010).

Transgender and Gender Expansive Adolescents

Cisgender adolescents are well-researched, but transgender adolescents are not, due, in part, to the fact that it is difficult to conduct studies on these adolescents due to their prevalence in the population. One reason for this might be the political and social stigma that this vulnerable population faces (Miller & Ryan, 2011) and their lack of willingness to identify themselves for research purposes. For example, in one study in the San Francisco Unified School District (SFUSD; n=2730), approximately 1.3% of adolescents identified as transgender (Shields, Cohen, Glassman, Whitaker, Franks, & Bertolini, 2013). Because of relatively low prevalence of this minority gender group, it is difficult to recruit large enough samples of transgender and gender expansive adolescents to identify important relationships between variables. This small sample size is probably related to a combination of fear of negative social impact, as well as transgender

and gender expansive identities being a minority population. The small research sample sizes available from this population poses a problem for researchers, as they are less likely to recruit significant groups of adolescents to conduct studies. The negative social stigma these transgender and gender expansive adolescents face can be immense, and until there is a reduction or elimination in the stigma of transgender or gender expansive identity, this is a constraint researchers will need to work around.

Although these young people make up only a small part of the larger adolescent population, transgender and gender expansive adolescents are extremely vulnerable. When compared to their cisgender counterparts, transgender and gender expansive adolescents experience increased emotional distress and higher rates of suicide (Almeida, Johnson, Corliss, Molnar, & Azrael, 2009, Eisenberg et al., 2017). For example, Grossman and D'Augelli (2007) found in their sample of 55 transgender adolescents, almost half had seriously contemplated suicide and a quarter reported a previous suicide attempt. Adolescents stated their transgender identity was a large factor in their decision to attempt suicide (Grossman & D'Augelli, 2007).

Adolescents with sexual orientations other than heterosexual are often grouped together with transgender and gender nonconforming adolescents in research settings (Clark, Lucassen, Bullen, Denny, & Fleming, 2014). However, LGBT adolescents face unique stressors related to their sexual and/or gender identity (CDC, 2014b). It is important to note that all subsets within the LGBT grouping have different needs and should be distinguished from each other, if sample sizes allow. For example, a sexually active adolescent lesbian has different sexual educational needs than a transgender and gender expansive male with biologically female genitals having sex with a cisgender male. In order to best identify the unique needs and behaviors of transgender

and gender expansive adolescents, this study will only examine transgender and gender expansive adolescents and the differences between birth assigned sex for these youth.

Risky Sexual Behaviors for Transgender and Gender Expansive Adolescents

The transgender and gender expansive population has unique experiences that potentially places them at unique sexual risks. Transgender and gender expansive people have seen an increase in exposure with much more mainstream media attention in recent years, with the public coming out of Caitlyn Jenner and scripted television shows showcasing transgender characters, such as Degrassi (Epitome Pictures, 2010) and Orange is the New Black (Netflix, 2014). However, research on problems faced by transgender and gender expansive people is fairly new, originating in the last five to 10 years. Most current research focuses on transgender females and HIV prevention (Brito, Hodge, Donatrong, Khosla, Lerebours, & Pope, 2015; Chow, Konda, Calvo, Klausner, & Caceres, 2017; Keshinro, et al. 2016), leaving transgender and gender expansive males and other sexual health risks understudied and the transgender and gender expansive population as whole, underserved (Reisner White, Mayer, & Mimiaga, 2014).

Although sexual orientation and gender identity have different meanings, these identities are often grouped together due to similar risks. Compared to the cisgender, heterosexual population, transgender women and men who have sex with men have a high prevalence of HIV and STIs (Chow, Konda, Calvo, Klausner, & Caceres, 2017). This grouping of two minority subsets is common practice in HIV transmission research due to the increased risk for HIV infection with anal penetration when compared to vaginal penetration. Few studies separate their findings by subgroups (see Chow et al. 2017 for an exception), and grouping does not allow for examination of transgender and gender expansive behaviors explicitly. This study will focus

solely on transgender and gender expansive adolescents and their gender identity and birth assigned sex, not their sexual orientation.

Compared to the cisgender, heterosexual population, transgender women have a high prevalence of HIV and STIs (Chow, Konda, Calvo, Klausner, & Caceres, 2017). HIV carries some of the most severe consequences of any STI, therefore it is studied more frequently. However, for adolescents engaging in risky sexual behavior, any STI is serious. Chow et al. (2017) studied men who have sex with men and transgender women in Peru and found that chlamydia and gonorrhea were present at high levels with 19% near the anus and 4.8% in the pharyngeal cavity. As another example, Brito et al. (2015) conducted research in the Dominican Republic and reported that among their men who have sex with men and transgender women population, 11% reported having an STI. More research is needed on STIs such as chlamydia and gonorrhea in the transgender population.

Developmental Assets and Risky Sexual Behaviors

Developmental assets may influence a person's ability to engage in or abstain from risky sexual behavior. Developmental assets are personal characteristics derived from internal and external characteristic sources, including self-esteem and personal relationships, that help adolescents in their transition to adulthood (Search Institute, 2017). Characteristics such as having a positive identity, being socially competent, and empowered by significant others have been shown to decrease an adolescent's risk for risky sexual behavior in the cisgender population. The more assets an adolescent has, the more likely it is that he or she will not engage in risky behavior, including risky sexual behavior (Evans et al., 2004). However, research has also found that adolescents with positive developmental assets still engage in risk behaviors, suggesting that engaging in experimentation with some risky behaviors is a relatively common

part of adolescence (Zweig, Phillips, & Duberstein Lindberg, 2002). It is important to highlight that many studies in the adolescent population, especially if they have not been conducted in the last 5-10 years, do not explicitly clarify the gender identity of their participants. It was assumed that, in studies where there were no explicit categories for cisgender and transgender students, results were applied to both gender identity groups with no special categories. There are elements of developmental assets, including role models, goals for the future, and healthy habits, that are associated with adolescents being less likely to engage in risky sexual behaviors such as sex without a condom, having sex with multiple partners, being under the influence of alcohol or drugs during sex, and sex with no or an unreliable contraceptive method (Oman, Vesely, & Aspy, 2005).

Developmental Assets and Sexual Risk in Transgender and Gender Expansive Adolescents

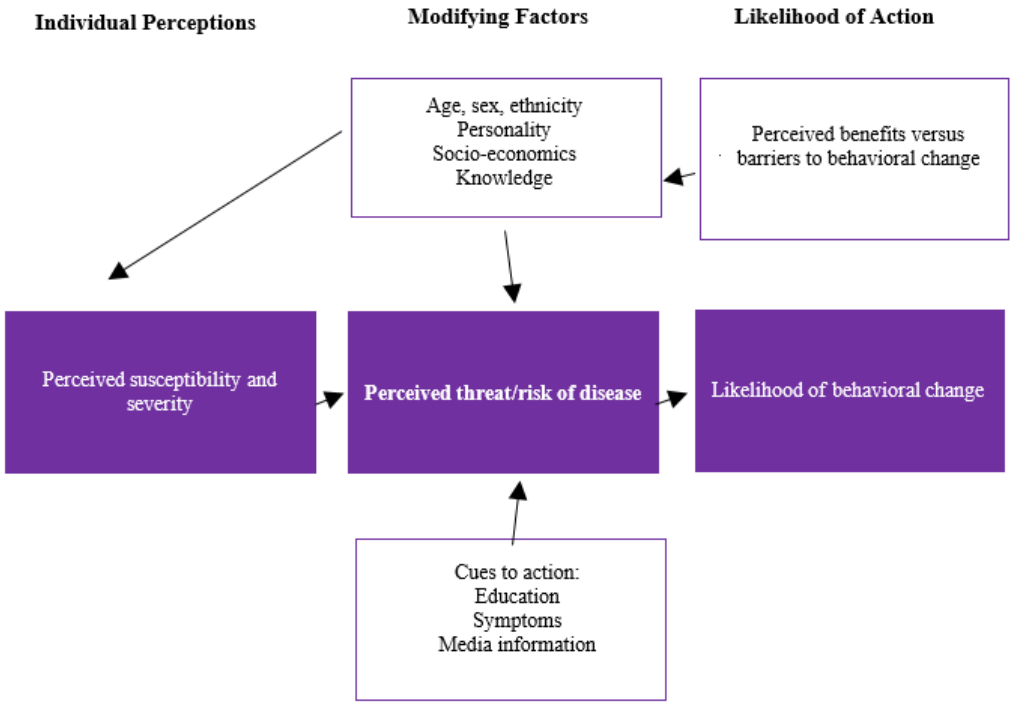
Relationships between developmental assets and risky sexual behavior in the transgender and gender expansive population have been studied in adults, but not adolescents. Much of the research conducted with adults relates to self-esteem, which is a dimension of the developmental asset of positive identity in this study. Transgender women experience stress from the stigma and harassment they face related to their gender identity (Van Devanter et al., 2011). This harassment lowers self-esteem in a vulnerable population and leaves psychosocial needs of acceptance and feeling safe in an environment unmet (Van Devanter et al., 2011). Lowered self-esteem contributes to lower levels of the positive identity developmental asset, and places transgender women at higher risk of engaging in risky sexual behavior. A recent study reported that only 31% of transgender men had always used a condom during sex, meaning that 69% of transgender men engaged in risky sexual behavior by having unprotected sex (Reisner et al. 2014). This risky sexual behavior was associated with a history of psychosocial distress such as depression,

anxiety, violence, and victimization. If these unmet psychosocial needs of acceptance and feeling safe in an environment were met, adolescents might be less inclined to engage in risky sexual behavior.

Conceptual Framework

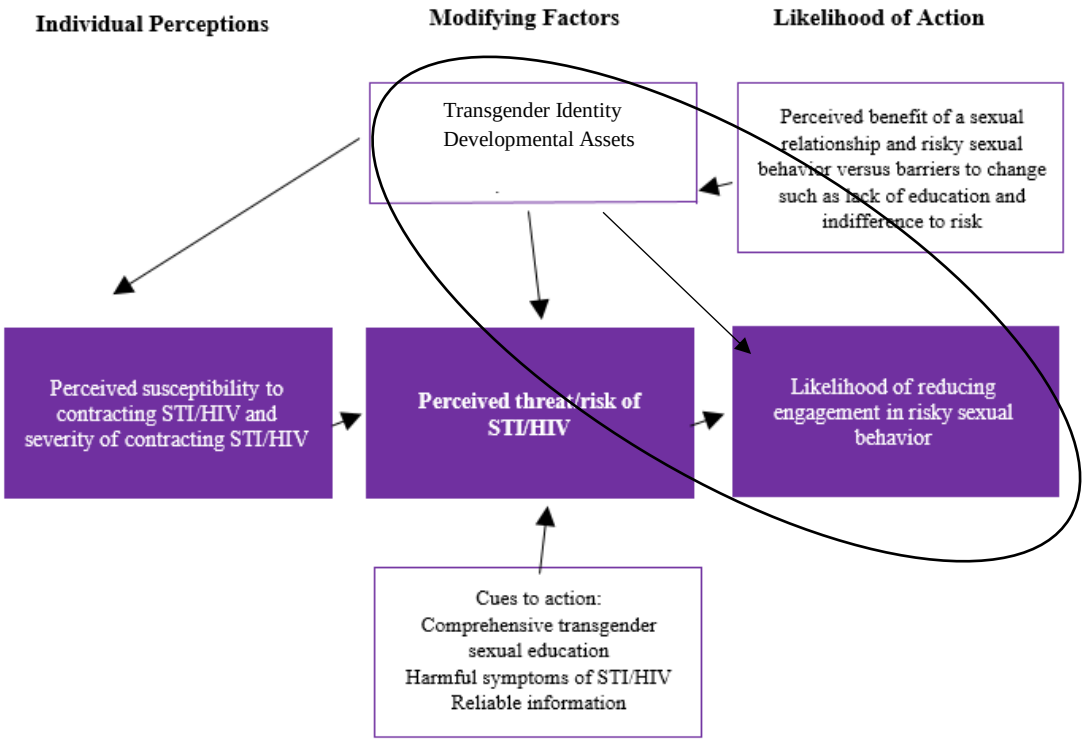
Young people's choices to engage in risky sexual behavior or not can be guided by the Health Belief Model. This theoretical model focuses on preventative health care and one of its main components is that the perception of a threat will impact the way a person addresses a health problem (Rosenstock, 1974). As shown in Figure 1, the Health Belief Model states that four components affect an adolescent's perception of the threat such as pregnancy and STIs. The four components are: perceived benefits and barriers to behavior change, modifying factors, perceived susceptibility and severity of the threat, and cues to action (University of Twente, 2012).

Figure 1: Graphic representation for Health Belief Model



As shown in Figure 2, more specific to the current study, adolescent's developmental assets (e.g. social competencies, positive identity, and empowerment) fit in the framework as modifying factors of how an adolescent views the threat of pregnancy or STIs.

Figure 2: Graphic representation for Health Belief Model with study-specific concepts



Hypotheses

Study hypotheses are listed below.

1. Adolescents who identify as transgender and gender expansive will self-report lower levels of positive developmental assets and higher prevalence of higher risky sexual behaviors (i.e. inconsistent condom use, sex with multiple partners, using an unreliable or no contraceptive, and being under the influence of alcohol or drugs during sex) than adolescents who identify as cisgender.
2. Transgender and gender expansive adolescents who self-report high levels of positive developmental assets (e.g., social competency, positive identity, and empowerment) will

be less likely to engage in risky sexual behaviors, than those transgender and gender expansive adolescents who report low levels of developmental assets.

3. There will be differences in levels of developmental assets and risky sexual behaviors between adolescents who identify as transgender and gender expansive male and those who identify as transgender and gender expansive female.

Conceptual Definitions of Terms

According to the CDC, risky sexual behavior is anything that increases someone's risk for human immunodeficiency virus (HIV), sexually transmitted infections (STI), and unplanned pregnancy (CDC, 2016). Some examples include inconsistent condom use, using the withdrawal or "pull-out method," having unprotected sex with multiple partners, and having sex while under the influence of drugs or alcohol.

Developmental assets are skills and traits that assist adolescents in their transition to adulthood (Search Institute, 2017). The three developmental assets of interest in this study are social competencies, positive identity, and empowerment. Specific traits of interest that comprise these assets are feeling good about oneself (positive identity), saying no to things that are dangerous or unhealthy, planning ahead and making good choices, and staying away from poor influences (social competency), and being given useful roles and responsibilities (empowerment). Internal characteristics are factors that come from oneself, such as self-esteem. External characteristics come from outside oneself, such as from relationships with friends, family, and significant others. Developmental assets are hypothesized as protective factors in this study, because they may influence behavior, including risky sexual behavior (Evans et al., 2004).

Transgender is a term for a person whose gender they identify with is different than their biological sex (Stein, 2012). Cisgender is a term for a person whose gender identity aligns with

their biological sex and gender they were assigned at birth (Stein, 2012). Gender fluidity and non-binary are not the same as being transgender; however, sometimes these identities are grouped together into one group due to limitations from the phrasing of survey questions. In this study, a transgender and gender expansive female is a female who was born biologically male. A transgender and gender expansive male is a male who was born biologically female. The modifying factors from Rosenstock's Health Belief Model (1974) are the developmental assets measured by the Minnesota Student Survey.

Assumptions

There are a few assumptions that were made in this study. The most important assumption to acknowledge is that adolescents are answering the questions in the MSS honestly and validly. Another is that adolescents are aware of their gender identity and can articulate it according to the questions provided. Lastly, an important assumption is that the questions on the MSS are reliable and valid measures of gender identity, developmental assets, and risky sexual behavior in adolescents.

Methods

Study Design

This is a secondary analysis of a cross sectional survey administered in schools affiliated with school districts in Minnesota in 2016. The Minnesota Student Survey (MSS) is a comprehensive survey which collects information about numerous topics including healthy eating, physical activity, safety in the home, and risky behavior such as alcohol, drug use, and sexual activity. The survey is standardized, with all adolescents responding to the same question set.

Study Setting and Sample

Two hundred eighty-two school districts participated in implementing this survey in 2016. This included 85% of public districts operating statewide. The MSS was completed by adolescents in grades 5, 8, 9, and 11. Sexual history and behavior questions were added to the survey for adolescents beginning in 9th grade; therefore, this study only included data from 9th and 11th graders (n=80,929). In the original study, passive consent was used, meaning that unless parents elected to opt their adolescent out, adolescents were given the survey to participate. This secondary data analysis study was approved by the University of Minnesota IRB as exempt research (see Appendix A).

Data Collection

In the original study, data were collected by each individual school throughout the first half of 2016. The Minnesota Department of Health provided every school with a standard set of survey instructions to read to adolescents prior to administration. School staff members including teachers, administrators, and other ancillary staff helped administer the survey. The MSS was anonymous and was administered online and with paper surveys, both in the classroom, but only one method was chosen per school. Questions on the survey were the same for both the electronic and paper versions (Minnesota Student Survey Interagency Team, 2013). The MSS administration team, part of the Minnesota Department of Health, took care to remove invalid responses from the surveys and those with high levels of inconsistency or probable exaggeration were eliminated (Minnesota Student Survey Interagency Team, 2013). Eliminating these surveys increases validity for the MSS.

Measures

The MSS was administered as a student self-report questionnaire. The current secondary data analysis only focused on the survey items regarding transgender and gender expansive identity, demographics, risky sexual behavior, and developmental assets.

Transgender and Gender Expansive Identity, Demographic Characteristics, and Risky Health Behaviors. An adolescent's transgender and gender expansive identity comes from a positive answer to a single item (nominal level of measurement): Do you consider yourself transgender, genderqueer, genderfluid, or unsure about your identity? Response options were "yes" and "no." This study also used several demographic items on the MSS to describe transgender and gender expansive adolescents. Biological sex is measured with the item "what is your biological sex." Nominal response options are "male" and "female." Grade level in school is measured by the item "what is your grade in school right now?" Racial and ethnic identity are measured by nominal measure items including: "are you Hispanic or Latino/a." The aforementioned item had response options of "yes" and "no." Additionally, racial and ethnic identity is measured by the item "in addition, what is your race (If more than one describes you, mark ALL that apply)." Nominal response options included "American Indian or Alaskan Native," "Asian," "black, African, or African American," "Native Hawaiian or other Pacific Islander," and "white." Additional items describing family or other living situations were measured with the nominal item "Which adults do you live with (Mark ALL that apply)." Nominal response options included numerous options such as "biological mother (the woman who gave birth to me," "biological father," "sometimes mother, sometimes father," "foster parent(s)," and "none." Free and reduced lunch status was measured by the nominal item "do you currently get free or reduced-price lunch at school?" Response options were "yes" and "no."

To describe engagement in risky health behaviors, cigarette or electronic cigarette, alcohol, and marijuana use were all measured by items such as "during the last 30 days, on how many days did you smoke a cigarette? Use an electronic cigarette (e-cigarette, e-hookah, vaping pen? Drink one or more drinks of an alcoholic beverage? Use marijuana or hashish (Do NOT count medical marijuana prescribed for you by a doctor)? Response options for all substance use questions included items that ranged from "0 days" to "all 30 days." Adolescents who responded "0 days" were nominally categorized as not using that substance ("no") and all other answers from "1 to 2 days" to "All 30 days" were categorized as a "yes" response. Lastly, to identify sexually active participants, an item was selected that asked, "Have you ever had sexual intercourse (had sex)?" Nominal response options were "yes" and "no."

Developmental Assets. Several items included on the MSS are drawn from the Developmental Assets Profile (DAP) which has been found to be a reliable and valid measure of developmental assets (The Collaborative for Search Institute, 2005). Three developmental assets are measured by the MSS: social competencies, positive identity, and empowerment. Each developmental asset is measured with a semicontinuous, mean averaged scale, with between three and eight items per asset. Adolescents had four options for each question ranging from "not at all or rarely" to "extremely or almost always." The social competencies sub-scale consists of eight questions such as, "I say no to things that are dangerous or unhealthy" and "I build friendships with other people." Cronbach's alpha for this subscale was 0.84. The positive identity sub-scale consists of seven questions such as "I feel good about myself" and "I find good ways to deal with things that are hard in my life." Cronbach's alpha for the positive identity subscale was 0.84. Lastly, empowerment sub-scale was composed of three questions that included "I feel valued and appreciated by others" and "I am given useful roles and responsibilities." Cronbach's

alpha for the empowerment subscale was 0.81. In addition to using scale scores in descriptive analyses, median scores for each developmental asset were calculated and used to divide the transgender and gender expansive groups into high and low levels of developmental assets. Median scores are as follows: positive identity (2.17), empowerment (2.33), and social competency (2.5).

Risky Sexual Behaviors. The MSS measures risky health behaviors. Risky sexual behaviors are captured with several items that have a combination of nominal and ordinal response options. Sex with multiple partners was measured by the items "during the last 12 months, with how many different male partners have you had sexual intercourse" and "with how many different female partners have you had sexual intercourse." Ordinal response options to these items are "none," "1 person," "2 persons," "3 persons," "4 persons," "5 persons," and "6 or more persons." Multiple sexual partners was defined as two or more sexual partners in the past year, based on previous research which uses a similar convention (Poulin & Graham, 2001; Rucevíc, 2010).

Noncondom use was measured by "the LAST time you had sexual intercourse, did you or your partner use a condom." Nominal responses to this item are "yes" and "no." Being under the influence of drugs or alcohol during sex was measured by "did you drink alcohol or use drugs before you had sexual intercourse the LAST time." Nominal response options were "yes" and "no." General contraceptive use was measured by "the LAST time you had sexual intercourse, what ONE method did you or your partner use to prevent pregnancy?" Options for the final question were: no method was used to prevent pregnancy, birth control pills, condoms, Depo-Provera shot (or any birth control shot), Nuva Ring (or any birth control ring), Implanon (or any implant) or any IUD, withdrawal (pull-out), some other method, and not sure. To operationalize

risky sexual behavior, responses to the previous question were categorized into one of two groups: no method was used to prevent pregnancy, withdrawal (pull out), and not sure versus use of a contraceptive method.

Data Analysis

Descriptive statistics were calculated to describe the entire sample for this secondary data analysis study, including frequencies, percentages, and means, using IBM Statistical Pack for Social Science (SPSS) version 24 (IBM, 2015). Only adolescents who reported ever having sexual intercourse were included in analysis of bivariate relationships between developmental assets and risky sexual behavior. Of the cisgender adolescents who participated in the MSS, 15,749 self-reported they had ever had sex, and 572 transgender and gender expansive adolescents reported the same. For Hypothesis 1, to test differences in levels of positive developmental assets between sexually active cisgender and transgender and gender expansive adolescents, t-tests were performed. Additionally, for Hypothesis 1, chi square tests were used to examine differences in the prevalence of risky sexual behavior in cisgender and transgender and gender expansive adolescents. For Hypothesis 2, chi square tests were conducted to examine differences in the prevalence of risky sexual behavior by whether transgender and gender expansive adolescents reported high or low levels of positive developmental assets. Lastly for Hypothesis 3, t-tests were used to evaluate differences in the levels of developmental assets among sexually active transgender and gender expansive sample in terms of birth assigned males and females; chi square tests were used to evaluate differences in the prevalence of risky sexual behavior between biological males and females who identify as transgender or gender expansive.

Results

Descriptive Statistics

Demographic characteristics describing the entire sample are summarized in Table 1. Results were grouped by gender identity; cisgender versus transgender and gender expansive. Transgender and gender expansive adolescents identified themselves as 31.5% (n=684) biologically male and 67.2% (n=1,457) biologically female. Cisgender adolescents were 50.8% (n=40,014) male and 49.1% (n=38, 369) female. The majority of adolescents in both groups were white/Caucasian, with 58.7% (n=1,257) of transgender and gender expansive adolescents and 71.5% (n=55,962) of cisgender adolescents responding as such. Almost half (48.0%) of transgender and gender expansive adolescents lived in a two-parent household, compared to over two thirds (68.3%) of cisgender adolescents. Over a third (38.8%) of transgender and gender expansive adolescents reported participating in a free or reduced-price lunch program in comparison to just over a fourth (26.8%) of cisgender adolescents. Ninth graders made up the majority of the study for both gender identity groups at 58.6% (n=1,271) of transgender and gender expansive and 55.1% of cisgender adolescents. The majority of adolescents in both groups self-reported high grades; 66.3% (n=1,414) of transgender and gender expansive adolescents and 78.4% of cisgender adolescents (n=60,846) reported their grades as mostly As or Bs. Nearly a quarter (23.4%) of transgender and gender expansive and 17.1% of cisgender adolescents reported drinking alcohol in the last 30 days.

With regard to risky health behaviors, nearly a quarter (23.5%) of transgender and gender expansive adolescents self-reported cigarette/E-cigarette compared to only 14.4% of cisgender adolescents. Additionally, 17.4% (n=337) of transgender and gender expansive and 10.6% (n=7,758) of cisgender adolescents reported marijuana use in the last 30 days. Lastly, 29.9% (n=572) of transgender and gender expansive and 22% (n=15,749) of cisgender adolescents reported ever having sexual intercourse. Finally, in terms of being sexually active, almost 30%

(29.9%) of transgender and gender expansive adolescents and about a fifth (22.0%) of their cisgender peers reported ever having sexual intercourse. These two groups of sexually active adolescents make up the subsets of adolescents that were used for analysis of subsequent hypotheses.

Cisgender versus Transgender and Gender Expansive Adolescent Comparisons

Results of comparisons of developmental assets and risky sexual behavior between the sexually active cisgender and transgender and gender expansive adolescents are listed in Table 2. Transgender and gender expansive adolescents scored significantly lower in all three categories of developmental assets than cisgender adolescents. For example, the mean positive identity score for transgender and gender expansive adolescents was 2.22, compared to the cisgender mean score of 2.72 ($p < 0.001$). This means that transgender and adolescents experience significantly lower components of positive identity, including having high self-esteem, than their cisgender peers. Mean scores on the empowerment sub-scale were also significantly different between transgender and gender expansive adolescents and their cisgender peers (2.26 vs. 2.78, $p < 0.001$) suggesting that transgender adolescents have fewer relationships in their lives which are positive that aid in development. Lastly, transgender and gender expansive adolescents were significantly lower than cisgender adolescents on the social competency subscale (2.54 vs. 2.78, $p < 0.001$). These differences in developmental assets indicate that transgender and gender expansive adolescents are more likely to have low self-esteem, have poor social relationships, and to succumb to negative peer pressure than their cisgender peers.

Risky sexual behaviors were also analyzed and compared between transgender and gender expansive and cisgender adolescents (Table 2). Over half (51.3%, n=289) of transgender and gender expansive adolescents compared to over a third (38.3%, n=5,926) of cisgender

adolescents reported they did not use a condom the last time they had sexual intercourse ($p < 0.001$). Almost twice as many transgender and gender expansive adolescents (13.2%, n=251) reported having two or more lifetime sexual partners, compared to 7.7% (n=5,522) of cisgender adolescents ($p < 0.001$). With regard to unreliable contraceptive or no contraceptive use (withdrawal/pull-out, no method, or not sure), 21.8% (n=124) of transgender and gender expansive adolescents compared to 14.0% (n=2,257) of cisgender adolescents reported this risky sexual behavior ($p < 0.001$). Lastly, significantly greater numbers of transgender and gender expansive youth (40.7%, n=224) reported being under the influence of alcohol or drugs the last time they had sexual intercourse, compared to 25.4% (n=3,702) of cisgender adolescents ($p < 0.001$).

In summary, these significant comparisons provide support for Hypothesis 1. Transgender and gender expansive adolescents reported significantly lower levels of developmental assets and higher levels of risky sexual behavior than their cisgender peers.

Relationships between Developmental Assets and Risky Sexual Behavior

Results for comparisons between different levels of developmental assets and risky sexual behavior for the sexually active transgender and gender expansive subsample are summarized in Table 3. Of the 12 relationships that were tested, half (six) were statistically significant at $p < 0.05$. There was no identifiable pattern for what developmental assets were likely to indicate what risky sexual behavior the adolescents were more likely to engage in. No single risky sexual behavior was statistically significant for all three developmental assets. Furthermore, no one developmental asset had statistically significant relationships with all four risky sexual behaviors. Adolescents with low levels of positive identity were more likely to have multiple sexual partners (11.2%) than those with high positive identity (15.6%, $p = 0.005$).

Transgender and gender expansive adolescents with low levels of empowerment were more likely to report inconsistent or noncondom use (56.9%), sex under the influence of alcohol or drugs (17.8%), and using an unreliable or no contraceptive (45.2%) than those who reported high levels of empowerment (45.7%, 24.0%, and 35.4%, respectively, $p < 0.05$ for all significant values).

Adolescents with low social competency were associated with the risky sexual behaviors of having multiple partners (8.5%) and sex under the influence of alcohol or drugs (30.8%) compared to transgender and gender expansive adolescents who had high levels of social competency (22.9% and 14.4%, respectively, $p < 0.001$). There are some statistically significant relationships between levels of developmental assets and risky sexual behaviors. Based on these data, Hypothesis 2 is mostly supported.

Transgender and Gender Expansive Females versus Transgender and Gender Expansive Males Comparison

Results for analysis of relationships between the developmental assets and risky sexual behaviors of transgender and gender expansive adolescents by their biological gender (males and females) are listed in Table 4. First, there were differences in the gender groups for two out of three developmental assets. For example, transgender and gender expansive adolescents who were born biologically female reported higher levels of positive identity and empowerment than those who were born biologically male. Transgender and gender expansive adolescents who were born male reported lower levels of positive identity (mean score=2.11) than those born female (mean score=2.46, $p < 0.001$). There was also a difference in mean scores between biological females (2.47) and biological males (2.16) for empowerment ($p < 0.001$). In terms of risky sexual behaviors, there were statistically significant differences between adolescents in

terms of their assigned gender at birth for two of four behaviors; having multiple sexual partners and having using an unreliable or no contraceptive. Based on these results, Hypothesis 3 was partially supported. There were some statistically significant differences between transgender and gender expansive males and females in their reported levels of developmental assets and subsequent likelihood of engaging in risky sexual behavior.

Discussion

Building off of previous analyses conducted by Eisenberg et al., (2017), this secondary data analysis of the 2016 Minnesota Student Survey is one of the first to report on the relationship between developmental assets and risky sexual behavior in the transgender and gender expansive population. It is also one of the first to offer a comparison of transgender and gender expansive adolescents to their cisgender peers, while examining differences among transgender and gender expansive females and males. This sample allowed for an improved understanding about the health needs of a marginalized and underserved population. Highlights of descriptive results from the sample and results supporting the hypotheses are discussed, along with findings from other work that supports this study's findings. Strengths and limitations of the study and implications for nursing practice are discussed below as well.

Unique Highlights of Transgender and Gender Expansive Sample

This sample of adolescents who identify as transgender, gender nonconforming, non-binary, or gender fluid offered a valuable opportunity for study. Little is known about these adolescents and what these adolescents understand to be sexual risks, including how to prevent STIs and unplanned pregnancies. Using this sample can help to identify previously missing information about transgender adolescents and the relationships between risky sexual behaviors and developmental assets. For example, there was more diversity in this sample in terms of race

and ethnicity among the transgender and gender expansive adolescents than among cisgender adolescents. This diversity suggests that transgender and gender expansive adolescents are more likely to be negatively impacted by the intersection of race and gender identity than cisgender adolescents. In addition, transgender and gender expansive adolescents were more likely to come from a family structure other than a two-parent home, participate in free or reduced-price lunch programs, have worse grades, participate in substance use, and engage in sexual intercourse than their cisgender peers. This demographic information suggests that transgender and gender expansive adolescents are more likely to participate in negative behaviors, come from challenged economic backgrounds, and be more racially diverse than cisgender adolescents; all of which are related to well-known negative social determinants of health.

Results of Transgender and Gender Expansive Adolescents versus Cisgender Adolescents

In support of Hypothesis 1, there were statistically significant ($p=<0.001$) results indicating that transgender and gender expansive adolescents are more likely to report lower levels of positive developmental assets and engage in risky sexual behavior than cisgender adolescents. These findings are both clinically and statistically significant. They demonstrate that transgender and gender expansive adolescents are at much higher risk for negative consequences of sexual activity including STIs, HIV, and unplanned pregnancy, compared to their cisgender peers. Furthermore, these results indicate that transgender and gender expansive adolescents are far more likely to see themselves less positively, experience less empowerment from social influences, and feel more negative about their potential to be successful in life than their cisgender peers. Perhaps this relates to the stigma experienced by transgender, gender-fluid, and gender-nonconforming people. Reisner et al. (2015) found that, compared to their cisgender peers, transgender youth are two to three times more likely to have depression, anxiety, suicidal

thoughts and attempts, and seek mental health treatment. This suggests transgender adolescents face stressors that cisgender adolescents do not. These unique stressors are likely related to or reflected in transgender and gender expansive adolescent's low levels of positive developmental assets. This has clinical significance because transgender and gender expansive adolescents having lower levels of positive developmental assets places them more at risk for risky sexual behavior. Transgender and gender expansive inclusive sexual education as well as transgender and gender expansive positive environments could help to increase levels of positive developmental assets for the transgender and gender expansive adolescent population. One example of this kind of inclusive education is found in the Trans Student Educational Resources (TSER). TSER is a website dedicated to transgender and gender expansive adolescent resources and the organization released a series of infographics that cover various topics including reminders to practice safer sex during hormone therapy and use condoms on sexual toys (TSER, 2017). The Healthy Teen Network (Cortes, Eisler & Desiderio, 2016) promotes respectful environments and inclusive education by avoiding making assumptions about gender or sexuality, including scenarios that are not strictly between two cisgender and heterosexual people, respectful use of pronouns, and much more. School administrators, teachers, and counselors should implement these resources. By creating a respectful and inclusive environment for transgender and gender expansive adolescents, these marginalized adolescents could perceive a safe space to learn and develop. Fostering feelings of respect and allowing transgender and gender expansive students to gain more positive developmental assets could reduce risky sexual behaviors, and possibly reduce the staggeringly high rates of transgender and gender expansive adolescent suicide rates (Almeida, Johnson, Corliss, Molnar, & Azrael, 2009, Eisenberg et al., 2017).

Relationships Between Risky Sexual Behaviors and Developmental Assets

For Hypothesis 2, there were mixed results. Findings included significant relationships between having multiple sexual partners and low positive identity. Inconsistent or noncondom use, sex under the influence of alcohol or drugs, and use of an unreliable or no contraceptive were all identified as having significant relationships with low empowerment. Having multiple sexual partners as well as sex under the influence of alcohol or drugs had significant relationships with low social competency. While significant results are crucial and should be discussed, it is also important to note that due to the nature of some transgender and gender expansive sexual activity, condoms or contraceptives are not always required. This may decrease statistical significance for contraceptive-based risky sexual behaviors. For example, two adolescents with the same genitalia would not require a contraceptive to prevent pregnancy, but may still use a barrier method, such as condoms, to prevent STI and HIV transmission. These pairs of adolescents would have responded to survey items for methods to prevent pregnancy in a manner that would suggest they engaged in risky sexual behaviors. Therefore, it may appear these adolescents are engaging in risky sexual behavior, when, in reality, they may be taking precautions the survey does not account for.

Transgender and gender expansive adolescents with low levels of positive identity appeared more likely to have multiple sexual partners. This could mean that transgender and gender expansive adolescents with low self-esteem might not value their sexual relationships or feel that sex should be an intimate or selective experience. This is both clinically and statistically significant. Nemoto et al. (2016) examined male to female transgender sex workers in Thailand, finding that adolescents who had more understanding of their work and gender identity and how it related to their economic independence were more able to re-establish relationships with

family members who often had not accepted their child's gender transition. Additionally, the report highlighted that HIV prevention programs for these sex workers should include the importance of financial security and how it is related to social support. The results of the Nemoto et al. (2016) study relate to positive identity and empowerment, as well as risky sexual behavior. HIV is prevented by taking measures to ensure that a person is not engaging in risky sexual behaviors. Methods to reduce the risk of HIV transmission includes condom and other barrier method use, abstinence, and monogamy. Social support is a key component of empowerment, and parental acceptance can also help to increase self-esteem; an element of positive identity. As demonstrated, when positive identity is high, transgender and gender expansive adolescents are less likely have multiple sexual partners. Considering adolescents who report low positive identity, it is possible that targeted education on safer sex practices, particularly concerning monogamous relationships, as well as mental health assessments, and positive coping mechanisms could be useful to help encourage less engagement in risky sexual behavior. These practices could also identify certain mental health needs, as they pertain to one's identity.

Empowerment was the developmental asset which demonstrated three out of four associations with risky sexual behaviors. The associations between empowerment and inconsistent or noncondom use, sex under the influence of alcohol or drugs, and the use of an unreliable or no contraceptive were all statistically significant. This infers that if external factors like friends and schoolmates highly value safe sexual activity, other transgender and gender expansive adolescents may be less likely to engage in risky sexual behavior. Additionally, transgender and gender expansive adolescents may share ideas and recommendations about contraceptives and barrier methods. One study found that among a group of adolescents, implementing a peer sexual education program was useful in a variety of areas including skills

and interventions for safer sex methods (Layzer, Rosapep & Barr, 2017). If a group of transgender and gender expansive adolescents is uneducated or believes they are not at risk for pregnancy or STIs, the more likely it is that they do not take necessary precautions to protect themselves from pregnancy or STIs. This is further evidence of the need for inclusive sexual education for all members of the LGBTQ+ community.

The final developmental asset examined in Hypothesis 2 was social competency. There were two statistically significant relationships found: social competency and multiple sexual partners, and social competency and sex under the influence of alcohol or drugs. These relationships are similar to the relationships examined in empowerment. One of the main components of social competency is the ability to resist negative peer pressure. If a transgender and gender expansive adolescent has low levels of social competency, are less likely to be able to resist poor peer influence, and are around other people who are encouraging or normalizing risky sexual behavior, they would be more likely to engage in risky sexual behavior with multiple sexual partners and under the influence of alcohol or drugs. One study found that some LGBTQ adolescents found social support among other adolescents in the LGBTQ community, but experienced negative peer pressure to be sexually active, even when some adolescents did not want to do so (Higa et al., 2014). Another factor of social competency is the ability to plan ahead and make good choices. If a transgender and gender expansive adolescent has not thought about what their sexual experience is worth or how they can avoid engaging in risky sexual behavior, they could be more likely to have risky sex under the influence or have multiple sexual partners.

Transgender and Gender Expansive Biological Males and Females

Lastly, Hypothesis 3 also saw mixed results. First, there statistically significant differences between the two groups for two of the assets: positive identity and empowerment.

Biological females reported higher levels of positive identity (2.46) and empowerment (2.47) than biological males (2.11 and 2.16, respectively, $p < 0.001$). However, there were no statistically significant differences between biological females and males with regard to social competencies. One recent study reported that transgender and gender expansive female adolescents with parents who were accepting of their gender identity were more likely to rely on their parents for social support (Le, Arayasirikil, Chen, Jin, & Wilson, 2016). These family relationships relate to the current study because parental acceptance and social support are related to empowerment. As demonstrated, higher levels of empowerment are related to engaging in fewer risky sexual behaviors in the general transgender and gender expansive population, and this study was unable to identify the same relationship among the biological sexes in the transgender and gender expansive population. These results suggest that biological males that transition to female or identify as gender-fluid or nonbinary experience more negativity, feel worse about themselves, and have less positive social relationships than those who are biologically female.

Conversely, transgender and gender expansive biological females engaged in more risky sexual behavior than transgender and gender expansive males. These biological females were more likely to have multiple sexual partners (15.8%) and sex under the influence of alcohol or drugs (31.7%) than transgender and gender expansive biological males (12% and 17.2%, $p < 0.026$). Results are fully reported in Table 4. Multiple sexual partners could be related to sexual experimentation, although this may not be a unique characteristic for biological males, or to biological females adopting more the traditional gender role of cisgender men by having multiple sexual partners. This also suggests that it may be more important for biological females to be educated on the risks of having sex under the influence of alcohol or drugs more than biological

males. However, there were not significant differences between groups for inconsistent or noncondom use, and unreliable or no contraceptive used. It should be highlighted that these two risky sexual behaviors were the two methods of preventing STIs and pregnancy which require, mostly, a penis and a vagina. As noted previously, transgender and gender expansive sexual activities do not always require a condom or another method of contraceptive. This could be one of the reasons there were not significant differences between transgender and gender expansive males and females.

Strengths and Limitations

Results and implications from this study should be viewed with both strengths and limitations in mind. The MSS is useful in that it allows for analysis of a large sample of adolescents who attend schools from all areas of the state including both metropolitan and rural locations. The sample in this study is diverse and is comprised of adolescents from numerous ethnic backgrounds, gender identities, and income levels. This heterogenous sample allows for generalizability to the general adolescent transgender and gender expansive and cisgender populations. The data are based on survey questions, and not all questions are transgender and gender expansive-inclusive. For example, sexual activity involving a transgender and gender expansive adolescent with a penis and another partner with a penis would not require a contraceptive. Adolescents in this situation would select “no method” for their method of contraception to prevent pregnancy and be categorized as engaging in risky sexual behavior. Two partners with vaginas, however, would not require a condom, and would have engaged in inconsistent or noncondom use. Furthermore, the survey only asks about students who have had sexual intercourse. Transgender and gender expansive youth who are sexually active with partners and have the same genitalia as they do are excluded from the definition of sexual

intercourse. The MSS has been designed for inclusivity for transgender and gender expansive adolescents by including items on transgender and gender expansive identity, but still has areas for improvement with regard to gender-inclusive and sensitive language in its sexual activity questions and other questions. For instance, the question about biological sex could be revised for transgender and gender expansive to use like "gender assigned at birth." Furthermore, because of the phrasing of the survey, we were unable to distinguish between adolescents who actively identify as transgender and gender expansive and those who were unsure of their gender identity. This could lead to over-generalization for a population with diverse experiences and unique needs.

Additionally, while transgender and gender expansive people are receiving more exposure in both popular media and scientific research, there is still a strong stigma around minority gender identities. Adolescents may be less likely to indicate they are transgender and gender expansive if they believe there will be negative social repercussions from the survey despite anonymity or if they have not fully accepted their transgender and gender expansive identity in their own lives. The MSS is a self-report survey. Results were assumed to be truthful and accurate, but may have been unreliable. Lastly, transgender and gender expansive adolescents are subject to more harassment and bullying than cisgender adolescents (Institute of Medicine, 2011). Because of this threat, transgender and gender expansive adolescents may have missed school the day of the survey and therefore, would not be included in the results.

Lastly, the separation of questions for biological sex and transgender and gender expansive identity help transgender and gender expansive adolescents feel they are being understood and accounted for during research. This is a strength that can be further implemented in practice. Asking patients for sex assigned at birth and current gender identity can help patients

feel comfortable with seeking the care they need. The inclusion of gender-nonconforming, genderfluid, and other gender identities with the transgender identity helps to include marginalized gender-identity groups that may otherwise feel invalidated if they were simply asked about biological sex.

Conclusions and Recommendations

Conclusions

Study findings suggest that transgender and gender expansive adolescents have fewer developmental assets and engage in risky sexual behavior more frequently than cisgender adolescents. Some developmental assets might protect transgender and gender expansive adolescents from engaging in certain risky sexual behaviors, but having a high level of one developmental asset does not necessarily result in a transgender and gender expansive adolescent being less likely to engage in all elements of risky sexual behavior. A transgender adolescent who has high levels of positive identity is only less likely to have multiple sexual partners. Furthermore, high social competency was less likely to be associated with having multiple sexual partners or to having sexual intercourse under the influence of alcohol or drugs. Yet there was no relationship between social competency and inconsistent or noncondom use or use of an unreliable or no contraceptive. Transgender and gender expansive females and males reported different results, with transgender and gender expansive males (biological females) more likely to report engaging in risky sexual behavior than transgender and gender expansive females (biological males), while at the same time reporting higher levels of developmental assets. An outstanding question is, within biological sex groups of the transgender and gender expansive adolescent population, do developmental assets still serve as protective factors against risky sexual behavior?

Implications for Nursing Practice

The transgender and gender expansive population has unique health needs. Nursing staff in all locations, but particularly in community clinics, pediatric settings, and schools should know how to provide care for transgender and gender expansive people of all ages, particularly vulnerable adolescents. Nurses should implement transgender and gender expansive inclusive questions when obtaining a health history. These could include questions similar to the MSS by having an adolescent indicate if they identified as transgender, genderfluid, non-binary, or are unsure of their gender identity. Nurses could ask their transgender and gender expansive patients questions similar to the survey to measure developmental assets such as "how do you feel about yourself," or "how do you usually respond to peer pressure?" This assessment could also be accomplished with the use of items from the Home, Education/Employment, Eating, Activities, Drugs, Sexuality, Suicidal ideation and Safety (HEEADSSS) assessment tool (Doukrou & Segal, 2017). The HEADSSS assessment would allow nurses to assess an adolescent's current social status and assess for low developmental assets potentially linked to engaging in risky sexual behaviors. Once at-risk transgender and gender expansive adolescents are identified, there would be an opportunity to provide additional education about risky sexual behaviors while implementing transgender and gender expansive inclusive sexual education. For example, if a transgender and gender expansive adolescent indicated that they had low levels of positive identity, the nurse would then know he or she should place extra emphasis on the importance of protection when having sex with multiple sexual partners. Implementing these suggested changes is crucial for the delivery of sensitive and tailored care to help reduce poor outcomes for the transgender and gender expansive adolescent population. Transgender and gender expansive

adolescents need to be able to feel as though they are respected and cared for by health care professionals and nurses may be the best place for that to start.

Negative social stigma around transgender and gender expansive identity may be one of the reasons for low developmental assets. Nurses can take on roles in broadly breaking down social stigma in several areas. For example, school nurses can provide education to faculty, staff, and students on the possible negative effects of transgender and gender expansive stigma and help to implement programs to create welcoming and inclusive school environments. Nurses in the public health field can take similar action to school nurses in their communities and places of practice. All nurses are responsible for being advocates to vulnerable populations. The transgender and gender expansive, and LGBTQ+ in general, communities need advocates for educational and political change on all levels of legislation. Any work nurses can do to diminish the negative social stigma of a transgender or gender expansive identity could help make positive impacts for transgender and gender expansive children, adolescents, and adults, and potentially save their lives.

Recommendations for Future Research

Replication of results found is crucial to help build a knowledge base regarding transgender and gender expansive sexual health and increase validity of this study's findings. Qualitative approaches could be especially useful for explaining vulnerable individuals' reasoning behind engaging in risky sexual behaviors. Such studies could provide the needed insights to health behaviors engaged in by transgender and gender expansive adolescents. Another useful next step would include generating additional items on the MSS based on a key difference revealed by support for Hypothesis 3. Transgender and gender expansive males (biological females) have more positive developmental assets than transgender and gender

expansive females (biological males), but still engage in risky sexual behavior more often than transgender and gender expansive females (biological males). These findings, with the additional variable of biological sex are particularly concerning because they suggest that more positive developmental assets are not protective against engaging in risky sexual behavior. Thus, future research should focus on the differences between transgender and gender expansive females and males and how their experiences vary. This may help to better determine which transgender adolescents are at the highest risk for engaging in risky sexual behavior.

Table 1: Demographics of 2016 Minnesota Student Survey Participants (n=81,885)

Biological Sex	Transgender N	Transgender %	Cisgender N	Cisgender %
Male	684	31.5	40,014	50.8
Female	1,457	67.2	38,369	49.1
Race/Ethnicity				
American Indian	44	2.1	805	1.0
Asian	181	8.5	4,677	6.0
Black	140	6.5	4,545	5.8
Pacific Islander	11	0.5	117	0.1
White	1,257	58.7	55,962	71.5
Multiple Races	252	11.8	5,319	6.8
Hispanic	255	11.9	6,816	8.7
Family Structure				
2 adult	1,028	48.0	53,554	68.3
Other family structures	1,112	52.0	24,901	31.7
Grade				
9th	1,271	58.6	43,368	55.1
11th	897	41.4	35,393	44.9
Free/Reduced Lunch				
Yes	834	38.8	20,936	26.8
No	1,315	61.2	57,226	73.2
Grades This Year				
Mostly As or Bs	1,414	66.3	60,846	78.4
Cs or below	712	33.7	16,763	21.6
Past 30-Day use of:				
Alcohol				
Yes	458	23.4	12,519	17.1
No	1,497	76.6	60,759	82.9
Marijuana				
Yes	337	17.4	7,758	10.6
No	1,604	82.6	65,205	89.4
Cigarette/E-Cigarette				
Yes	458	23.5	10,565	14.4
No	1,492	76.5	62,273	85.6
Ever had Sexual Intercourse				
Yes	572	29.9	15,749	22
No	1,338	70.1	55,901	78

Table 2: Transgender and Gender Expansive and Cisgender Adolescents' Developmental Assets and Risky Sexual Behavior (n=16,321)

	Transgender Mean and Standard Deviation	Cisgender Mean and Standard Deviation		Test Statistics	
Developmental Asset			t-test	Degrees of Freedom	P value
Positive Identity	2.22, 0.71	2.72, 0.70	15.46	16,035	<0.001
Empowerment	2.26, 0.80	2.78, 0.78	9.26	16,040	<0.001
Social Competency	2.54, 0.61	2.78, 0.62	16.71	16,045	<0.001
	Transgender N and Percentage	Cisgender N and Percentage		Test Statistics	
Risky Sexual Behavior			χ^2	Degrees of Freedom	P value
Inconsistent/Noncondom Use	289, 51.3%	5,296, 38.3%	38.86	1	<0.001
Multiple Sexual Partners	251, 13.2%	5,522, 7.7%	75.82	1	<0.001
Unreliable/No Contraceptive	124, 21.8%	2,257, 14%	23.45	1	<0.001
Sex Under the Influence	224, 40.7%	3,702, 25.4%	63.93	1	<0.001

Table 3: Comparison of Transgender and Gender Expansive Adolescents Risky Sexual Behaviors by Level of Developmental Asset (n=572)

Risky Sexual Behaviors	High Developmental Assets	Low Developmental Assets	Test Statistics		
	High Positive Identity (n, %)	Low Positive Identity (n, %)	x^2	d.f.	p value
Inconsistent/Noncondom use	136, 53.1%	146, 49.5%	0.724	1	0.395
Multiple Sexual Partners	116, 15.6%	126, 11.2%	7.914	1	0.005
Sex Under the Influence	56, 18.7%	64, 24.7%	2.94	1	0.086
Unreliable/No Contraceptive	110, 43.5%	106, 36.9%	2.4	1	0.121
	High Empowerment (n, %)	Low Empowerment (n, %)	x^2	d.f.	p value
Inconsistent/Noncondom use	127, 45.7%	156, 56.9%	6.99	1	0.008
Multiple Sexual Partners	114, 14%	128, 12.1%	1.49	1	0.223
Sex Under the Influence	69, 24.8%	50, 17.8%	4.11	1	0.042
Unreliable/No Contraceptive	96, 35.4%	122, 45.2%	5.36	1	0.021
	High Social Competency (n, %)	Low Social Competency (n, %)	x^2	d.f.	p value
Inconsistent/Noncondom use	158, 50.2%	123, 52.3%	0.256	1	0.613
Multiple Sexual Partners	129, 22.9%	111, 8.5%	72.51	1	<0.001
Sex Under the Influence	46, 14.4%	73, 30.8%	21.87	1	<0.001
Unreliable/No Contraceptive	95, 40.8%	121, 39.5%	0.083	1	0.773

Table 4: Comparison of Biological Females and Males on Developmental Assets and Risky Sexual Behavior (n=572)

	Biological Female Mean and Standard Deviation	Biological Male Mean and Standard Deviation		Test Statistics	
Developmental Asset			t-test	Degrees of Freedom	P value
Positive Identity	2.46, 0.74	2.11, 0.66	5.39	317, 866	<0.001
Empowerment	2.47, 0.86	2.16, 0.74	4.04	308, 997	<0.001
Social Competency	2.60, 0.68	2.51, 0.58	1.62	306,537	0.107
	Biological Female N and Percentage	Biological Male N and Percentage		Test Statistics	
Risky Sexual Behavior			χ^2	Degrees of Freedom	P value
Inconsistent/Noncondom Use	84, 45.7%	203, 54.4%	3.796	1	0.051
Multiple Sexual Partners	89, 15.8%	159, 12%	4.967	1	0.026
Unreliable/No Contraceptive	59, 31.7%	65, 17.2%	15.200	1	<0.001
Sex Under the Influence	76, 43.2%	146, 39.7%	0.607	1	0.436

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Appendix A: IRB Approval

UNIVERSITY OF MINNESOTA

Twin Cities Campus

Human Research Protection Program
Office of the Vice President for Research

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Minneapolis, MN 55455

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NOT HUMAN RESEARCH

November 21, 2017

Barbara McMorris

952-649-8690
mcmo0023@umn.edu

Dear Barbara McMorris:

On 11/21/2017, the IRB reviewed the following submission:

Type of Review:	Initial Study
Title of Study:	Examining relationships between developmental assets and risky sexual behaviors in transgender and gender expansive youth
Investigator:	Barbara McMorris
IRB ID:	STUDY00000087
Sponsored Funding:	None
Grant ID:	None
Internal UMN Funding:	None
Fund Management Outside University:	None
IND, IDE, or HDE:	None
Documents Reviewed with this Submission:	• Clark, HRP-595, Category: IRB Protocol

The IRB determined that the proposed activity is not research involving human subjects as defined by DHHS and FDA regulations. To arrive at this determination, the IRB used "WORKSHEET: Human Research (HRP-310)." If you have any questions about this determination, please review that Worksheet in the HRPP Toolkit Library and contact the IRB office if needed.

Ongoing IRB review and approval for this activity is not required; however, this determination applies only to the activities described in the IRB submission and does not

apply should any changes be made. If changes are made and there are questions about whether IRB review is required, please submit a Modification to the IRB for a determination.

Sincerely,

Clinton Dietrich, MA, CIP
IRB Analyst

We value feedback from the research community and would like to hear about your experience. The link below will take you to a brief survey that will take a minute or two to complete. The questions are basic, but your responses will help us better understand what we are doing well and areas that may require improvement. Thank you in advance for completing the survey.

Even if you have provided feedback in the past, we want and welcome your evaluation.

https://umn.qualtrics.com/SE/?SID=SV_5BiYrqPNMJRQSBn

Appendix B: Minnesota Student Survey Items Used

Minnesota Student Survey LEVEL 3
(Grades 9 and 11, ALCs, JCFs)

You can help your community and school learn more about the lives and feelings of young people like you. The questions on this survey cover many areas. Some questions might make you feel uncomfortable. You do not have to answer any question you don't want to. You can choose not to complete the survey.

Do NOT write your name on this survey. No one will know how you answered these questions. Your answers will be kept private. Thank you for filling out this survey honestly and carefully.

BACKGROUND

1. What is your grade in school right now?
- 7th grade
- 8th grade
- 9th grade
- 10th grade
- 11th grade
- 12th grade
- Not applicable

2. How old are you?
- 11 years old or younger
- 12 years old
- 13 years old
- 14 years old
- 15 years old
- 16 years old
- 17 years old
- 18 years old
- 19-20 years old
- 21 years old or older

3. Are you...

3a. Hispanic or Latino/a
- Yes
- No

3b. Somali
- Yes
- No

3c. Hmong
- Yes
- No

4. In addition, what is your race? (If more than one describes you, mark ALL that apply)
- American Indian or Alaskan Native
- Asian
- Black, African or African American
- Native Hawaiian or Other Pacific Islander
- White

5. What is your biological sex?
- Male
- Female

6. Do you consider yourself transgender, genderqueer, genderfluid, or unsure about your gender identity?
- Yes
- No

7. A person's appearance, style, dress, or the way they walk or talk may affect how people describe them. How do you think other people at school would describe you?
- Very or mostly feminine
- Somewhat feminine
- Equally feminine and masculine
- Somewhat masculine
- Very or mostly masculine

8. Which of the following best describes you?
- Heterosexual (straight)
- Bisexual
- Gay or lesbian
- Not sure (questioning)

9. Which adults do you live with? (Mark ALL that apply)
- Biological mother (the woman who gave birth to me)
- Biological father
- Adoptive mother
- Adoptive father
- Sometimes mother, sometimes father
- Stepmother
- Stepfather
- Parent's girlfriend/partner
- Parent's boyfriend/partner
- Grandparent(s) or other adult relative(s)
- Foster parent(s)
- Other adult(s) I am not related to
- None

10. Can you talk to your father about problems you are having?
- Yes, most of the time
- Yes, some of the time
- No, not very often
- No, not at all
- My father is not around

11. Can you talk to your mother about problems you are having?
- Yes, most of the time
- Yes, some of the time
- No, not very often
- No, not at all
- My mother is not around

SCHOOL

12. What is the MAIN thing you plan to do RIGHT AFTER high school? (Mark only ONE answer)
- I don't plan to graduate from high school
- Get my GED
- Go to a two-year community or technical college
- Go to a four-year college or university
- Get a license or certificate in a career field
- Attend an apprenticeship program
- Join the military
- Work at a job
- Other

13. Do you have an IEP or get special education services?
- Yes
- No

14. Do you currently get free or reduced-price lunch at school?
- Yes
- No

15. Since the beginning of the school year, how many times have you changed schools?
- 0 times
- 1 time
- 2 times
- 3 or more times

16. How would you describe your grades this school year?
- Mostly As
- Mostly Bs
- Mostly Cs
- Mostly Ds
- Mostly Fs
- Mostly Incompletes
- None of these letter grades

17. During the last 30 days, how many times have you skipped school or cut classes, but NOT a full day of school, without being excused?
- None
- Once or twice
- 3 to 5 times
- 6 to 9 times
- 10 or more times

18. During the last 30 days, how many times have you skipped or cut a FULL day of school or classes, without being excused?
- None
- Once or twice
- 3 to 5 times
- 6 to 9 times
- 10 or more times

19. During the last 30 days, how many times have you...

19a. Gone to the nurse's office?
- None
- Once or twice
- 3 to 5 times
- 6 to 9 times
- 10 or more times

19b. Stayed home because you were sick?
- None
- Once or twice
- 3 to 5 times
- 6 to 9 times
- 10 or more times

19c. Been sent to the office for discipline?
- None
- Once or twice
- 3 to 5 times
- 6 to 9 times
- 10 or more times

19d. Had an in-school suspension (ISS)?
- None
- Once or twice
- 3 to 5 times
- 6 to 9 times
- 10 or more times

19e. Been suspended from school (out-of-school suspension/OSS)?
- None
- Once or twice
- 3 to 5 times
- 6 to 9 times
- 10 or more times

56d. Teachers/other adults at school care about you?
- Not at all
- A little
- Some
- Quite a bit
- Very much

56e. Adults in your community care about you?
- Not at all
- A little
- Some
- Quite a bit
- Very much

57. In general, how does each of the following statements describe you?

57a. I feel in control of my life and future.
- Not at all or rarely
- Somewhat or sometimes
- Very or often
- Extremely or almost always

57b. I feel good about myself.
- Not at all or rarely
- Somewhat or sometimes
- Very or often
- Extremely or almost always

57c. I say no to things that are dangerous or unhealthy.
- Not at all or rarely
- Somewhat or sometimes
- Very or often
- Extremely or almost always

57d. I build friendships with other people.
- Not at all or rarely
- Somewhat or sometimes
- Very or often
- Extremely or almost always

57e. I express my feelings in proper ways.
- Not at all or rarely
- Somewhat or sometimes
- Very or often
- Extremely or almost always

57f. I feel good about my future.
- Not at all or rarely
- Somewhat or sometimes
- Very or often
- Extremely or almost always

57g. I deal with disappointment without getting too upset.
- Not at all or rarely
- Somewhat or sometimes
- Very or often
- Extremely or almost always

57h. I find good ways to deal with things that are hard in my life.
- Not at all or rarely
- Somewhat or sometimes
- Very or often
- Extremely or almost always

57i. I plan ahead and make good choices.
- Not at all or rarely
- Somewhat or sometimes
- Very or often
- Extremely or almost always

57j. I stay away from bad influences.
- Not at all or rarely
- Somewhat or sometimes
- Very or often
- Extremely or almost always

57k. I resolve conflicts without anyone getting hurt.
- Not at all or rarely
- Somewhat or sometimes
- Very or often
- Extremely or almost always

57l. I feel valued and appreciated by others.
- Not at all or rarely
- Somewhat or sometimes
- Very or often
- Extremely or almost always

57m. I accept people who are different from me.
- Not at all or rarely
- Somewhat or sometimes
- Very or often
- Extremely or almost always

57n. I am thinking about what my purpose is in life.
- Not at all or rarely
- Somewhat or sometimes
- Very or often
- Extremely or almost always

57o. I am included in family tasks and decisions.
- Not at all or rarely
- Somewhat or sometimes
- Very or often
- Extremely or almost always

57p. I am given useful roles and responsibilities.
- Not at all or rarely
- Somewhat or sometimes
- Very or often
- Extremely or almost always

57q. I am sensitive to the needs and feelings of others.
- Not at all or rarely
- Somewhat or sometimes
- Very or often
- Extremely or almost always

58. Over the last 2 weeks, how often have you been bothered by...
58a. Little interest or pleasure in doing things
- Not at all
- Several days
- More than half the days
- Nearly every day

58b. Feeling down, depressed or hopeless
- Not at all
- Several days
- More than half the days
- Nearly every day

59. During the last 12 months, did you do any of the following TWO OR MORE TIMES?
59a. Lie or con to get things you wanted or to avoid having to do something?
- Yes
- No

59b. Have a hard time paying attention at school, work or home?
- Yes
- No

59c. Have a hard time listening to instructions at school, work or home?
- Yes
- No

59d. Be a bully or threaten other people?
- Yes
- No

59e. Start fights with other people?
- Yes
- No

60. During the last 12 months, how many times did you do something to purposely hurt or injure yourself without wanting to die, such as cutting, burning, or bruising yourself on purpose?
- 0 times
- 1 or 2 times
- 3 to 5 times
- 6 to 9 times
- 10 to 19 times
- 20 or more times

61. Have you ever seriously considered attempting suicide? (Mark ALL that apply)
- No
- Yes, during the last year
- Yes, more than a year ago

62. Have you ever actually attempted suicide? (Mark ALL that apply)
- No
- Yes, during the last year
- Yes, more than a year ago

63. Have you ever had a boyfriend or girlfriend in a dating or serious relationship who...
63a. Called you names or put you down verbally?
- Yes
- No

63b. Hit, slapped or physically hurt you on purpose?
- Yes
- No

63c. Pressured you into having sex when you didn't want to?
- Yes
- No

64. Have YOU ever done any of the following to a boyfriend or girlfriend in a dating or serious relationship...
64a. Called him/her names or put him/her down verbally?
- Yes
- No

64b. Hit, slapped or physically hurt him/her on purpose?
- Yes
- No

64c. Pressured him/her into having sex when he/she didn't want to?
- Yes
- No

75. During the last 12 months, how often have you…

75a. Hidden your gambling/betting from your parents, other family members or teachers?
- Never
- Sometimes
- Many times
- All of the time

75b. Felt that you might have a problem with gambling/betting?
- Never
- Sometimes
- Many times
- All of the time

75c. Skipped hanging out with friends who do not gamble/bet to hang out with friends who do gamble/bet?
- Never
- Sometimes
- Many times
- All of the time

76. During the last 12 months, how often have you…

76a. Run away from home?
- Never
- Once or twice
- 3 to 5 times
- 6 to 9 times
- 10 or more times

76b. Damaged or destroyed property?
- Never
- Once or twice
- 3 to 5 times
- 6 to 9 times
- 10 or more times

76c. Hit or beat up another person?
- Never
- Once or twice
- 3 to 5 times
- 6 to 9 times
- 10 or more times

76d. Taken something from a store without paying for it?
- Never
- Once or twice
- 3 to 5 times
- 6 to 9 times
- 10 or more times

77. During the last 30 days, on how many days did you…

77a. Smoke a cigarette?
- 0 days
- 1 to 2 days
- 3 to 9 days
- 10 to 19 days
- 20 to 29 days
- All 30 days

77b. Smoke cigars, cigarillos or little cigars?
- 0 days
- 1 to 2 days
- 3 to 9 days
- 10 to 19 days
- 20 to 29 days
- All 30 days

77c. Use chewing tobacco, snuff or dip?
- 0 days
- 1 to 2 days
- 3 to 9 days
- 10 to 19 days
- 20 to 29 days
- All 30 days

77d. Use an electronic cigarette (e-cigarette, e-hookah, vaping pen)?
- 0 days
- 1 to 2 days
- 3 to 9 days
- 10 to 19 days
- 20 to 29 days
- All 30 days

77e. Use a hookah or a waterpipe to smoke tobacco?
- 0 days
- 1 to 2 days
- 3 to 9 days
- 10 to 19 days
- 20 to 29 days
- All 30 days

78. During the last 30 days, on how many days did you smoke cigarettes or other tobacco products that were flavored to taste like mint or menthol?
- 0 days
- 1 or 2 days
- 3 to 9 days
- 10 to 19 days
- 20 to 29 days
- All 30 days

79. During the last 30 days, on how many days did you use any tobacco product that was some other flavor, like candy, fruit, chocolate, clove, spice or alcoholic drinks?
- 0 days
- 1 or 2 days
- 3 to 9 days
- 10 to 19 days
- 20 to 29 days
- All 30 days

80. How old were you when you had your first drink of an alcoholic beverage, such as beer, wine, wine coolers and liquor, other than a few sips?
- I have never had a drink of alcohol other than a few sips
- 10 years old or younger
- 11 years old
- 12 years old
- 13 years old
- 14 years old
- 15 years old
- 16 years old
- 17 years old or older

81. During the last 30 days, on how many days did you drink one or more drinks of an alcoholic beverage?
- 0 days
- 1 to 2 days
- 3 to 5 days
- 6 to 9 days
- 10 to 19 days
- 20 to 29 days
- All 30 days

82. During the last 12 months, on how many occasions (if any) have you had alcoholic beverages to drink?
- 0-->SKIP TO QUESTION 85
- 1-2
- 3-5
- 6-9
- 10-19
- 20-39
- 40+

83. If you drink beer/wine/wine coolers/liquor, generally how much (if any) do you drink at one time?
- I don't drink beer/wine/wine coolers/liquor
- 1 glass/can/drink
- 2 glasses/cans/drinks
- 3 glasses/cans/drinks
- 4 glasses/cans/drinks
- 5 or more glasses/cans/drinks

84. During the past 30 days, on how many days did you have 5 or more drinks of alcohol in a row, that is, within a couple of hours?
- 0 days
- 1 day
- 2 days
- 3 to 5 days
- 6 to 9 days
- 10 to 19 days
- 20 or more days

85. How old were you when you tried marijuana (pot, weed) or hashish (hash, hash oil) for the first time? (Do NOT count medical marijuana prescribed for you by a doctor.)
- I have never tried marijuana or hashish
- 10 years old or younger
- 11 years old
- 12 years old
- 13 years old
- 14 years old
- 15 years old
- 16 years old
- 17 years old or older

86. During the last 30 days, on how many days did you use marijuana or hashish? (Do NOT count medical marijuana do prescribed for you by a doctor.)
- 0 days
- 1 to 2 days
- 3 to 5 days
- 6 to 9 days
- 10 to 19 days
- 20 to 29 days
- All 30 days

87. During the last 12 months, on how many occasions (if any) have you used marijuana or hashish? (Do NOT count medical marijuana prescribed for you by a doctor.)
- 0
- 1-2
- 3-5
- 6-9
- 10-19
- 20-39
- 40+

95. During the last 12 months, how many times has alcohol or drug use left you feeling depressed, agitated, paranoid or unable to concentrate?
- 0 times
- 1 time
- 2 times
- 3 or more times

96. During the last 12 months, how many times has alcohol or drug use caused you problems with the law?
- 0 times
- 1 time
- 2 times
- 3 or more times

97. Have you ever had sexual intercourse ("had sex")?
- Yes
- No --> SKIP TO QUESTION 105

98. During the last 12 months, with how many different male partners have you had sexual intercourse?
- None
- 1 person
- 2 persons
- 3 persons
- 4 persons
- 5 persons
- 6 or more persons

99. During the last 12 months, with how many different female partners have you had sexual intercourse?
- None
- 1 person
- 2 persons
- 3 persons
- 4 persons
- 5 persons
- 6 or more persons

100. Did you drink alcohol or use drugs before you had sexual intercourse the LAST time?
- Yes
- No

101. Have you talked with your partner(s) about...
101a. Protecting yourselves from getting sexually transmitted infections/HIV/AIDS?
- Never
- Not with every partner
- At least once with every partner

101b. Preventing pregnancy?
- Never
- Not with every partner
- At least once with every partner

102. How many times have you been pregnant or gotten someone pregnant?
- 0 times
- 1 time
- 2 or more times
- Not sure

103. The LAST time you had sexual intercourse, did you or your partner use a condom?
- Yes
- No

104. The LAST time you had sexual intercourse, what ONE method did you or your partner use to prevent pregnancy?
- No method was used to prevent pregnancy
- Birth control pills
- Condoms
- Depo-Provera shot (or any birth control shot), Nuva Ring (or any birth control ring), Implanon (or any implant) or any IUD
- Withdrawal (pull-out)
- Some other method
- Not sure

105. How much do you think people risk harming themselves physically or in other ways if they...
105a. Smoke one or more packs of cigarettes per day?
- No risk
- Slight risk
- Moderate risk
- Great risk

105b. Have five or more drinks of an alcoholic beverage once or twice per week?
- No risk
- Slight risk
- Moderate risk
- Great risk

105c. Smoke marijuana once or twice per week?
- No risk
- Slight risk
- Moderate risk
- Great risk